



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/829,556	04/22/2004	Mingui Sun	214001-00988-2	6363

3705 7590 07/25/2006

ECKERT SEAMANS CHERIN & MELLOTT  
600 GRANT STREET  
44TH FLOOR  
PITTSBURGH, PA 15219

EXAMINER

LAYNO, CARL HERNANDZ

ART UNIT

PAPER NUMBER

3766

DATE MAILED: 07/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/829,556

Applicant(s)

SUN ET AL.

Examiner

Carl H. Layno

Art Unit

3766

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 22 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 41-48 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 41-43 and 45-47 is/are rejected.
- 7) ☒ Claim(s) 44 and 48 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>9/9/04</u> . | 6) <input type="checkbox"/> Other: _____  |

Art Unit: 3766

## **DETAILED ACTION**

### ***Preliminary Amendment***

1. Acknowledgment is made of applicant's preliminary amendment, which was received on April 22, 2004.

2. Claims 1-40 have been canceled. Claims 41-48 remain active.

### ***Priority***

3. Acknowledgment is made of applicant's claim for priority as a Division of U.S. Application Serial No. 10/164,517, filed June 6, 2002, now U.S. Patent No. 6,847,844.

### ***Information Disclosure Statement***

4. Acknowledgment is made of applicant's Information Disclosure Statement (PTO-1449), which was received by the Office on September 9, 2004.

### ***Drawings***

5. Applicant's formal drawings were received by the Office on April 22, 2004 and have been approved by both the Draftsperson and the Examiner.

### ***Specification***

6. Applicant is reminded of the proper language and format for an abstract of the disclosure.

Art Unit: 3766

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The applicant should refrain from using the language "The present invention" in line 1 of the Abstract.

### *Claim Objections*

7. Claim 42 is objected to because of the following informalities:

-Claim 42, line 3 of the amended claims contains the duplicate language of claim 43. This appears to be a typographical error.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 43 and 47 recite the limitation "said antenna electrodes" in line 2 of each claim.

There is insufficient antecedent basis for this limitation in the claim. To overcome this rejection, the Examiner recommends replacing the word "electrodes" with the word "shells". Claim 45 is also rejected since this depends from rejected claim 43.

Art Unit: 3766

10. Claim 45 recites the limitations "the lower portion" in line 2 and "the electrode" (line 3). There is insufficient antecedent basis for both of these limitations in the claim. To overcome this rejection, the Examiner recommends replacing this with the words "a lower portion" and "an electrode", respectively.

***Claim Rejections - 35 USC § 102***

11. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

12. Claims 41, 42, 46, and 47 are rejected under 35 U.S.C. 102(e) as being anticipated by Schantz (US 6,845,253).

In regard to claim 41, the Schantz (US 6,845,253) patent describes a general purpose antenna design including an embodiment (Fig.15) which appears to read upon applicant's claimed antenna. Specifically, Fig.15 describes the construction of a spheroidal monopole antenna **1500** including a first radiating element **1502** connected to a second element **1504** facing in the opposite direction. Elements **1502** and **1504** appear to be concave in shape, hence, they appear to perform the function of applicant's "conductive concave shells".

In regard to claim 42, an insulating dielectric material may be inserted into the area **1515** between the convex surfaces of elements **1502** and **1504** (Fig.15 - col.23, lines 7-10).

In regard to claim 46, since Fig.15 describes the construction of a "spheroidal" shaped antenna, the antenna, when viewed from either end, would inherently be considered to be circular in shape.

In regard to claim 47, elements **1502** and **1504** appear to be symmetrical, as shown in Fig.15.

13. Claims 41, 42, 46, and 47 are rejected under 35 U.S.C. 102(b) as being anticipated by Leonhardt et al (US 4,352,112).

In regard to claim 41, the Leonhardt et al (US 4,352,112) patent describes a general purpose antenna reflector (Fig.6) comprising two membrane elements **1** and **9** having concave/convex shapes similar to that claimed by the applicant. These shapes were formed by providing negative pressure through conduit **8** to vacuum chamber **7**.

In regard to claim 42, according to Leonhardt et al an insulative foam backing **2** (as shown in Figs.1 and 4) may reside behind the reflector membranes **1** and **9**. See col.2, lines 52-

Art Unit: 3766

66. The reflector shape of Fig.15 is a case of “oppositely curved” (line 57) or “bi-concave” (line 60) elements.

In regard to claims 46 and 47, the reflector membranes 1 and 9 have a generally circular configuration if viewed from the end, as shown in Fig.3 and appear to be symmetrical (Fig.6).

#### *Allowable Subject Matter*

14. Claims 43 and 45 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

15. Claims 44 and 48 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

#### *Conclusion*

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

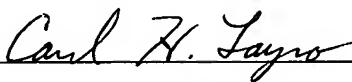
The Fanini et al (US 6,900,640) patent is cited for its pertinent recitation of back-to-back concave antenna shapes (Figs.17 and 17A). Unlike applicant's device, these shapes are not formed by two separate “shells” or elements.

Art Unit: 3766

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Carl H. Layno whose telephone number is (571) 272-4949. The examiner can normally be reached on 9/4/5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert E. Pezzuto can be reached on (571) 272-6996. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
\_\_\_\_\_  
**CARL LAYNO**  
PRIMARY EXAMINER

CHL  
7/21/2006